ABSTRACT

A D-aminoacylase having a high substrate specificity is provided. This D-aminoacylase can produce D-amino acids from N-acetyl-D,L-amino acids conveniently and efficiently at a low cost.

A D-aminoacylase produced by a microorganism of genus Defluvibacter; which acts on a N-acetyl-D-amino acid; which has a molecular weight (as determined by electrophoresis) of about 55,000 daltons, and an isoelectric point (as determined by two-dimensional electrophoresis for denatured system) of 5.3; which acts on N-acetyl-D-valine, N-acetyl-D-leucine, and the like, but not on N-acetyl-L-valine, N-acetyl-L-leucine, and the like; which has an optimal temperature of 37°C (pH 8) and an optimal pH value of 8 to 8.5 at 37°C; and whose activity is inhibited by Mn^{2+}, Co^{2+}, Ni^{2+}, and Zn^{2+} each at 1 mmol/L, and by dithiothreitol, 2-mercaptoethanol, o-phenanthroline, and L-cysteine each at 5 mmol/L.